



An Editorial Note on Bioelectronic Medicines: Recent Applications and Advancements

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Physical stipulation especially the issue pertaining to better health has been a leading complication as well as utmost challenge for human beings ever since the premature ages. As on the passing years, there has been an extensive range of advancement in the field of medicine and paramedical science. The incorporation of various revolutionary tools and methods has observed enormous leaps in the course of novel drug developments. Modernized therapies of medical sciences focus on the reliable, rapid and competent results with quite least pain during treatment. This is used to treat the illness, harmful diseases and other side effects. As a result, all these techniques broadly initiate and energize the people with greater believe to adopt these new revolutionary approaches. Among the all technologies, bioelectronics medicines play a crucial role in the vicinity of medicine and other specific areas.

Bioelectronic medicine is the discipline intended for execution of electronics philosophy to the biological sciences as well as to the medicines to fight with diseases. Bioelectronic medicine is a novel scientific ideology allied with the biological materials, which encompasses biological frameworks for data processing systems, pioneering devices so that the body reprogrammed to fight the diseases with electricity other than drugs. This novel approach has the incredible competency to significantly impact on abundant areas of medicines, anticipated for nation's economy and well-being of society. Bioelectronic medicine utilizes the latest technologies to interpret and regulate the electrical activity inside the nervous system of body. Bioelectronic medicines bring out the novel opportunities for therapies, real-time diagnostics, and cure advantages for patients. Nerve Stimulating or blocking appliances are implanted upon a nerve or held adjacent to the skins have the tendency to transform specific nerve activities. These new therapies draw out a definite alteration in organs physiology, renovate the conditions

of health, devoid of complex side effects of pharmaceutical agents. Such gadgets are already been existed in clinical trials to overcome the autoimmune diseases like rheumatoid arthritis, osteoarthritis, Implantable active medical devices which are connected to discrete peripheral nerves all areas, in viscera extend away from early therapeutics in high blood pressure and serious sleep disorder such as sleep apnoea. Numerous biosensors that are attached to the human body, artificial limbs, pace makers, blood glucose meter etc, are some of the significant applications of bioelectronics in medicines and healthcare, which indicates the upcoming future generation's medicine is full on electric.

Recent applications and advancements

Biosensors are specially fixed to the body, in order to examine the temperature of body and also to compute stress and strain in definite body parts. Current invention of programmable micro implants-sensors is explicitly incorporated to scrutinize crucial functions to profound inside the body. Bio-electronic medicine can trick to body parts into curative itself. This emerging new technology uses electronic pulses to cure ailments without revealing body to surgical risks or noxious side effects. Similarly, the highly advanced electro-stimulators are applicable to alter the signals of neurons in the encephalon. Artificial pacemakers are mostly useful to resolve complex problems associated with heart samples and for effective regulation of heart beat. In countries like Europe, Germany, the non-implanted devices named as Gamma-Core, which stimulates the vagus nerve looking like electrical razor is placed against neck for management of acute and chronic migraine and cluster headaches. For treating diabetic ulcers and burns, bioelectronic smart bandaids are implemented which utilizes sensors, biological materials and technologies of microsystems to watch and nursing the

wounds. These are invented by a team of researchers from countries of Tufts, Perdue, Harvard and US.

Recent years from the Institute for Basic Science (IBS) a scientific group of Center for advanced Nanoparticle Research (CNR) have formulated a multifunctional endoscope that unites theranostic nanoparticles (NPs)-therapy with translucent bioelectronics like lasers to investigate new medication and unique rescue strategy for a patient. Precarious cancer can be early detected by means of specific bioelectronic signal and growth of tumor cells can be reduced and curable at early stages. Multifunctional endoscope systems have the advanced features than conventional varieties to decrease the process time and enhance the effectiveness of modestly persistent surgical procedures for management of colon cancer. Currently the worldwide brand Google newly declared about contact lenses that can examine blood glucose levels. Bioelectronic medicines is new-evolution to the healthcare which saves millions of human lives because of its elegant technology and generation of electrical pulse by nerve-stimulating implantable devices to treat life threatening neurological disorders like epilepsy, Parkinson's, and Alzheimer's syndrome etc.

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